

# Plant Science

## Course Description

This course examines the scientific concepts related to plant systems. Students will consider environmental factors on plant growth. In addition students will examine plant classification, anatomy, physiology, and methods of propagation. Classroom and laboratory activities are supplemented through supervised agricultural experiences and leadership programs and activities.

**Course Code:** 011007

## Endorsements

**to teach:** AFNR

## Programs of Study to which this Course applies:

Plant Systems  
Plant Systems Plus  
Diversified Agriculture Systems  
Diversified Agriculture Systems Plus

AFNR.HS.5.1	
Develop and implement a crop management plan for a given production goal that accounts for environmental factors.	
AFNR.HS.5.1.b	Conduct an experiment testing the effect different environmental factors have on plant growth.
AFNR.HS.5.1.d	Interpret laboratory analyses of plant tissue samples.
AFNR.HS.5.2	
Utilize resources efficiently and sustainably for crop production.	
AFNR.HS.5.2.d	Analyze soil properties and chemistry.
AFNR.HS.5.3	
Create a plan for integrated pest management for plant production.	
AFNR.HS.5.3.b	Report on common plant pests and diseases.
AFNR.HS.5.4	
Apply principles of classification, plant anatomy, and plant physiology to plant production and management.	
AFNR.HS.5.4.a	Choose plants for a specific landscape and cropping situations.
AFNR.HS.5.4.b	Describe plant parts with regards to basic plant physiological processes.
AFNR.HS.5.4.c	Apply the knowledge of cell differentiation and functions of the major types of cells.
AFNR.HS.5.4.d	Explain the process and stages of germination in monocots and dicots.
AFNR.HS.5.5	
Propagate, culture, and harvest plants and plant products based on current industry standards.	
AFNR.HS.5.5.d	Describe the process of genetic engineering.
AFNR.HS.5.5.g	Choose appropriate plant propagation methods for various plant species.
AFNR.HS.5.7	
Develop awareness of factors influencing and affected by global plant production.	
AFNR.HS.5.7.a	Describe global production practices.
AFNR.HS.CR.1	
Describe career opportunities and means to achieve those opportunities in each of the AFNR career pathways.	
AFNR.HS.CR.1.a	Evaluate and implement the steps and requirements to pursue a career opportunity in an AFNR career pathway.
AFNR.HS.CR.1.b	Examine and choose career opportunities that are matched to personal life skills, talents, and career goals in an AFNR pathway of interest.
AFNR.HS.CR.2	
Demonstrate employability skills for college and career readiness.	
AFNR.HS.CR.2.a	Model personal responsibility in the workplace and community.
AFNR.HS.CR.2.b	Speak using strategies that ensure clarity, logic, purpose and professionalism in formal and informal settings.
AFNR.HS.CR.2.c	Produce clear, reasoned and coherent written and visual communication in formal and informal settings.

AFNR.HS.CR.2.d	Synthesize information, knowledge and experience to generate original ideas and challenge assumptions in the workplace and community.
AFNR.HS.CR.2.e	Apply reason and logic to evaluate workplace and community situations from multiple perspectives.
AFNR.HS.CR.2.f	Investigate, prioritize and select solutions to solve problems in the workplace community.
AFNR.HS.CR.2.g	Contribute to team-oriented projects and build consensus to accomplish results using cultural global competence in the workplace and community.
<b>AFNR.HS.CR.4</b>	
<b>Identify and demonstrate workplace safety.</b>	
AFNR.HS.CR.4.a	Identify and explain the implication of required regulations to maintain and improve safety, health and environments management systems.
AFNR.HS.CR.4.b	Apply health and safety practices to AFNR workplaces.
AFNR.HS.CR.4.c	Use appropriate protective equipment and demonstrate safe and proper use of AFNR tools and equipment.
<b>AFNR.HS.CR.5</b>	
<b>Evaluate the nature and scope of the AFNR Career Cluster and the role of agriculture, food and natural resources (AFNR) in society and the economy.</b>	
AFNR.HS.CR.5.a	Research, examine and discuss issues and trends that impact AFNR systems on local, state, national and global levels.
<b>AFNR.HS.CR.6</b>	
<b>Identify and demonstrate leadership skills and traits in demand of leadership roles in the agriculture industry.</b>	
AFNR.HS.CR.6.b	Craft SMART goals to achieve by the end of a specific agricultural education course.
AFNR.HS.CR.6.c	Write a career objective.
AFNR.HS.CR.6.d	Write a connection statement explaining how current coursework contributes to his or her career objective.
AFNR.HS.CR.6.e	Generate a personal statement explaining how he or she hopes to serve the people around them in their community and society.
AFNR.HS.CR.6.f	Write and deliver a speech focused on a currently controversial topic within the agricultural industry while arguing both points of view.